

## CLAIMS

1. An apparatus for conveying a specimen comprising a probe for conveying a specimen to be observed, and temperature control means for controlling a temperature of said probe whereby said sample does not change during conveyance.
  
2. A specimen-obtaining apparatus comprising:
  - a stage for supporting a sample;
  - 10 first temperature control means which regulates a temperature of said sample;
  - means for isolating a part of said sample;
  - probe moving means for mounting and moving a probe;
  - 15 a probe for obtaining a part of the sample isolated by said isolation means; and
  - second temperature control means for controlling a temperature of said probe.
  
- 20 3. A sample processing apparatus comprising:
  - a stage for supporting a sample;
  - first temperature control means for controlling a temperature of said sample;
  - ion beam generation means for irradiating said
  - 25 sample with an ion beam;
  - detection means for detecting a signal emitted from said sample in response to the irradiation of

said ion beam;

a probe for obtaining a part of the sample processed by the irradiation of said ion beam;

a sample table for evaluation;

5 second temperature control means for controlling a temperature of said probe; and

third temperature control means for controlling a temperature of said sample table.

10 4. The sample processing apparatus according to claim 3, wherein

the ion beam generated by said ion beam generation means is used to expose a face to be acquired and said detection means is used to acquire 15 information under conditions that the temperature of said sample is regulated to a predetermined temperature by said first temperature control means; and

20 section and attachment of the sample are carried out in a state where the temperature of said probe and sample is adjusted to a predetermined temperature by said first and second temperature control means.

25 5. The sample processing apparatus according to claim 3, wherein said first and second temperature control means are provided with cooling means for cooling said sample to a temperature equal to or

lower than a room temperature.

6. The sample processing apparatus according to  
claim 3, wherein said stage, said ion beam generation  
5 means, said detection means, said probe and said  
sample table are provided in a chamber with a  
controllable atmosphere, and said apparatus further  
comprises trap means for trapping a gas remaining in  
said chamber.

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7. The sample processing apparatus according to  
claim 3, wherein said first temperature control means  
includes a temperature-varying system in a portion  
onto which said sample is fixed; and the apparatus  
15 further includes:

a sample stage enabling moving or inclining of  
the sample fixed thereon;

a probe stage having a movable tip;

a sample table for evaluation;

20 first temperature detection means which is  
mounted in a part of said temperature-varying system  
to detect the temperature in the vicinity of the  
sample fixed to said temperature-varying system; and  
temperature control means for controlling

25 temperature of said temperature-varying system on the  
basis of the temperature detected by said first  
temperature detection means, thereby maintaining said

sample at a predetermined temperature.

8. A sample processing apparatus according to  
claim 7, wherein an ion beam can be irradiated on a  
5 lateral surface of the sample held on said  
temperature-varying system.

9. A sample processing apparatus according to  
claim 7, wherein said temperature control means  
10 further includes second temperature detection means  
for directly detecting the temperature of the sample;  
and display means for displaying the temperature  
detected by said second temperature detection means.

15 10. A sample processing apparatus according to  
claim 9, wherein said temperature control means  
executes temperature control in said temperature-  
varying system on the basis of the temperatures  
detected by said first and second temperature  
20 detection means.

11. A sample processing apparatus according to  
claim 3, wherein said emitted signal is a secondary  
electron or secondary ion.

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12. A sample processing apparatus according to  
claim 3, wherein said detection means includes a

first detector for detecting secondary electrons and a second detector for detecting secondary ions.

13. A sample processing method comprising the  
5 steps of:

controlling temperature of a sample, a probe and a sample table;

sectioning or processing the sample by irradiating a predetermined portion of the sample  
10 with an ion beam from at least two angular directions relative to a surface of the sample; and  
connecting said probe to a part of said sectioned sample.

15 14. A sample evaluating method comprising the steps of:

controlling a temperature of a sample, a probe and a sample table;

sectioning or processing the sample by irradiating a predetermined portion of the sample  
20 with an ion beam from at least two angular directions relative to a surface of the sample;  
connecting said probe to a part of said sectioned sample;

25 isolating said sectioned sample to which said probe has been attached;

attaching the isolated sample to said sample

table using the probe;  
cutting off the probe; and  
irradiating the sample attached to said sample  
table with an evaluation beam for evaluation to  
5 obtain from an emitted signal an image of a cross-  
sectioned face of the sample generated by the  
sectioning or processing step.

15. A conveying apparatus comprising:  
10 a conveying member for conveying a sample for  
observation under an electron microscope; and  
temperature control means which regulates a  
temperature of said conveying member;  
wherein said temperature control means regulates  
15 the temperature of said sample in such a manner that  
it does not change before and after the conveyance.